

1                   **(August 2, 2004)**

2                   **Statistical Aggregate Specification**

3                   **Basis of Acceptance**

4                   The acceptance of aggregate materials will be by statistical calculation or by single  
5                   test evaluation as defined in these provisions. The Contractor shall supply the  
6                   Engineer with tickets with each load as required in Section 1-09.2(1).

7                   **Lots and Sublots**

8                   For the purpose of acceptance sampling and testing, a lot is defined as the total  
9                   quantity of material for an item. All of the test results obtained shall be evaluated  
10                  collectively and shall constitute a lot. Sublot sampling and testing for statistical  
11                  acceptance shall be performed on a random basis at the frequency of one sample  
12                  per subplot. Based on plan quantities, the subplot size will be determined to the  
13                  nearest 100 tons (50 cy) to provide not less than three uniform sized sublots. The  
14                  maximum subplot size will be as defined in Table 1.

15                  **Point of Acceptance**

16                  The point of acceptance shall be as designated by the Engineer. All the test results  
17                  obtained from the acceptance samples for each individual item will be collectively  
18                  evaluated to determine a composite pay factor. Multiple sources shall not be  
19                  placed within the same limits of each separate spreading operation or in such a  
20                  way that the intermingling of different sources occurs. Each individual compaction  
21                  lift may be of a different source. The acceptance of aggregate materials from each  
22                  source shall be determined as follows:

- 23
- 24                  1. The Engineer, their designated representative, or the Contractor if  
25                  directed shall sample the aggregate material in accordance with WSDOT  
26                  FOP for AASHTO T 2 and 1-05.6. The sample size shall be equal to the  
27                  minimum requirements of WSDOT FOP for AASHTO T-2. For plan  
28                  quantities equal to twice the maximum subplot size listed in Table 1 or less,  
29                  the sample size shall be equal to 1.5 times the minimum requirements of  
30                  WSDOT FOP for AASHTO T-2 and 1-05.6.
- 31
- 32                  2. If sampled by the Contractor, the Contractor shall deliver the sample to  
33                  the Engineer's representative for acceptance testing of the material.

34                  **Testing**

35                  For plan quantities more than twice the maximum subplot size as shown in Table 1,  
36                  the acceptance testing laboratory will test and report each of the sublots of  
37                  material. This test data will be used to determine the Composite Pay Factor (CPF)  
38                  in accordance with Section 1-06.2(2)D and Table 2.

39                  For plan quantities equal to or less than twice the maximum subplot size, the  
40                  acceptance testing laboratory will split the sample into three individual test  
41                  samples. One of the three test samples will be tested in all aspects of the contract  
42                  requirements. If all the results of these tests are within the specification limits, the  
43                  material is accepted for use and no further testing is required. Material accepted  
44                  will be compensated at the unit bid price or as designated in the Contract  
45                  Provisions. If any of the test results are outside the specification limits, test both of  
46                  the remaining test samples for all aspects of the contract requirements. Using the  
47                  test results from all three test samples, determine the Composite Pay Factor (CPF)  
48                  in accordance with Section 1-06.2(2)D and Table 2. As an alternate, the Engineer  
49                  may allow compiled Contractor QA/QC results to be used if they are available and

1 considered representative of the stockpile. The maximum CPF will be 1.00 when  
2 the plan quantities are equal to or less than twice the maximum subplot size.  
3

4       **Test Results** The Engineer will furnish the Contractor with a copy of the  
5 results of all acceptance testing performed within three working days after  
6 sampling. The Engineer will also provide the Composite Pay Factor (CPF) or  
7 the completed sublots after three sublots have been tested.  
8

9       **Acceptance**

10      The material will be determined to be acceptable if the CPF is 1.00 or greater.  
11 Accepted material will be compensated at the unit bid price or as designated in the  
12 Contract Provisions.  
13

14      If the CPF is below 1.00 but is equal to or above 0.75, calculate the item  
15 adjustment factor in accordance with Section 1-06.2(2)D. The aggregate  
16 compliance price adjustment for acceptance of the material will be equal to the unit  
17 bid price multiplied by the item adjustment factor multiplied by the quantity of the  
18 material. For aggregate materials lacking a separate unit bid price, the unit bid  
19 prices shall be taken as the value listed in Table 1 for "Contingent Unit Price".  
20

21      An entire lot with a CPF of less than 0.75 will be rejected.  
22

23       **Rejected Material**

24      1. Rejection by the Contractor: As provided in paragraph 1 of Section 1-06.2(2)  
25 C, the Contractor may, prior to sampling, elect to remove any defective  
26 material and replace it with new material at no expense to the Contracting  
27 Agency. Any such new material will be sampled, tested, and evaluated for  
28 acceptance.  
29

30      2. Rejection Without Testing: The Engineer may, without sampling, reject any  
31 load or stockpile that appears defective prior to placement. Material rejected  
32 before placement shall not be incorporated into the work. No payment will be  
33 made for the rejected materials unless the Contractor requests that the  
34 rejected material be tested. If the Contractor elects to have the rejected  
35 material tested, it shall be designated as a separate lot. If the CPF for the  
36 rejected material is less than 0.75, no payment will be made for the rejected  
37 material. In addition, the cost of sampling and testing will be deducted from  
38 any monies due or that may become due the Contractor under the contract at  
39 the rate of \$600 per separate lot. However, if the CPF is 0.75 or greater, the  
40 cost of sampling and testing will be borne by the Contracting Agency and the  
41 material will be compensated at the new CPF.  
42

43      3. A different lot: In addition to the preceding random acceptance sampling and  
44 testing, the Engineer may also isolate from a normal subplot any material that is  
45 suspected of being defective. A minimum of three random samples of the  
46 suspect material will be obtained and tested. The material will then be  
47 evaluated for price adjustment as a separate lot. When the isolated material  
48 overlaps the division between material sublots, the resulting two adjoining  
49 partial sublots will be combined into a single lot with a minimum of six random  
50 samples.  
51

52      4. A lot in progress: The Contractor shall shut down operations and shall not  
53 resume placement of the aggregate until such time as the Engineer is satisfied  
54 that specification material can be produced whenever:

- a. The Composite Pay Factor (CPF), for a lot in progress, is less than 1.00 and no effort is being made toward correction.
  - b. The individual item factor ( $PF_i$ ), for any component of the lot in progress, is less than 0.95 and no effort is being made toward correction.
  - c. The CPF is less than 0.75.

5. An entire lot: An entire lot with a CPF of less than 0.75 will be rejected. The Engineer will take one or more of the actions listed in 1-06.2(2)B. The designated percentage reduction as defined in Section 1-06.2(2) B under Financial Incentive Paragraph 1, Item 3, shall be 25 percent. In addition, material that has been tested and rejected before the material is placed will have the cost of sampling and testing deducted from any monies due or that may become due the Contractor under the contract at the rate of \$600 per separate lot.

## Price Adjustments for Quality of Aggregate

**Price Adjustments for Quality of Aggregate**  
Statistical analysis of the quality of aggregate material will be based on the specifications in Section 9-03 or as modified elsewhere in these Provisions and will be determined based on Section 1-06.2. Applicable price adjustment factors are listed in Table 2.

If a component is not measured in accordance with these Provisions, its individual pay factor will be considered 1.00 in calculating the composite pay factor. The maximum attainable CPF shall be as listed in Table 1. For each lot of aggregate material the aggregate compliance price adjustment will be calculated as the product of the item adjustment factor in accordance with Section 1-06.2(2)D, the quantity of aggregate in the lot, and the unit bid price. For aggregate materials lacking a separate unit bid price, the unit bid prices shall be taken as the value listed in Table 1 for "Contingent Unit Price."

## Payment

Payment will be made in accordance with Section 1-04.1, for each of the following bid items that are included in the proposal:

“Aggregate Compliance Price Adjustment” by calculation.

"Aggregate Compliance Price Adjustment" will be calculated and paid for as described under Price Adjustments for Quality of Aggregate.

**TABLE 1 AGGREGATE ACCEPTANCE PARAMETERS**

Standard Specification	Item	Maximum Sub Lot size (tons)	Maximum Sub Lot size (cy)	*Maximum CPF	Contingent Unit Price per ton	Contingent Unit Price per cy
9-03.4(2)	Crushed Cover Stone & Crushed Screening	1000	500	1.05	\$20.00	\$40.00
9-03.9(1)	Ballast	2000	1000	1.05	\$20.00	\$40.00
9-03.9(2)	Shoulder Ballast	2000	1000	1.05	\$25.00	\$50.00
9-03.9(3)	Crushed Surfacing	2000	1000	1.05	\$17.00	\$34.00
9-03.9(4)	Maintenance Rock	2000	1000	1.00	\$17.00	\$34.00
9-03.10	Gravel Base	4000	2000	1.00	\$12.00	\$24.00
9-03.12(1)A	Gravel Backfill for Foundations Class A	1000	500	1.00	\$85.00	\$170.00
9-03.12(1)B	Gravel Backfill for Foundations Class B	1000	500	1.00	\$25.00	\$50.00
9-03.12(2)	Gravel Backfill for Walls	1000	500	1.00	\$15.00	\$30.00
9-03.12(3)	Gravel Backfill for Pipe Zone Bedding	1000	500	1.00	\$17.00	\$34.00
9-03.12(4)	Gravel Backfill for Drains	100	50	1.00	\$20.00	\$40.00
9-03.12(5)	Gravel Backfill for Drywells	100	50	1.00	\$20.00	\$40.00
9-03.13	Backfill for Sand Drains	2000	1000	1.00	\$15.00	\$30.00
9-03.13(1)	Sand Drainage Blanket	2000	1000	1.00	\$15.00	\$30.00
9-03.14(1)	Gravel Borrow	4000	2000	1.00	\$12.00	\$24.00
9-03.14(2)	Select Borrow	4000	2000	1.00	\$10.00	\$20.00
9-03.17	Foundation Material, Class A & B	1000	500	1.00	\$20.00	\$40.00
9-03.18	Foundation Material Class C	1000	500	1.00	\$20.00	\$40.00
9-03.19	Bank Run Gravel for Trench Backfill	4000	2000	1.00	\$5.00	\$10.00

**TABLE 2 PRICE ADJUSTMENT FACTORS**

Standard Specification	Item	Maximum Size Sieve: 100% pass (Note 1)	Nominal Maximum Size Sieve (Note 2)	Other Specification Sieves #4 and Larger	Specification sieves: #8 to #100	#200 Sieve	Sand Equivalent	Fracture (Note 3)	Dust Ratio
9-03.4(2)	Crushed Cover Stone & Crushed Screening	2	2	5	5	10	15	5	-
9-03.9(1)	Ballast	2	2	5	5	10	15	-	15
9-03.9(2)	Shoulder Ballast	2	2	5	5	-	-	5	-
9-03.9(3)	Crushed Surfacing	2	2	5	5	10	15	5	-
9-03.9(4)	Maintenance Rock	2	2	5	5	10	15	5	-
9-03.10	Gravel Base	-	2	5	-	6	10	-	10
9-03.12(1)A	Gravel Backfill for Foundations Class A	2	2	5	5	6	10	5	10
9-03.12(1)B	Gravel Backfill for Foundations Class B	-	2	5	-	6	10	-	10
9-03.12(2)	Gravel Backfill for Walls	2	2	5	-	6	10	-	10
9-03.12(3)	Gravel Backfill for Pipe Zone Bedding	2	2	5	5	6	10	-	-
9-03.12(4)	Gravel Backfill for Drains	2	2	5	-	6	-	-	-
9-03.12(5)	Gravel Backfill for Drywells	2	2	5	-	6	-	-	-
9-03.13	Backfill for Sand Drains	-	2	5	3	10	-	-	-
9-03.13(1)	Sand Drainage Blanket	-	2	5	3	10	-	-	-
9-03.14(1)	Gravel Borrow	2	2	5	5	6	10	-	-
9-03.14(2)	Select Borrow	2	2	5	5	6	10	-	-
9-03.17	Foundation Material, Class A & B	-	2	3	-	-	-	-	-
9-03.18	Foundation Material Class C	2	-	3	-	-	-	-	-
9-03.19	Bank Run Gravel for Trench Backfill	2	2	5	-	6	10	-	10

Note 1: 100% passing size shall be analyzed with a LSL of 99%

Note 2: Nominal maximum size sieve is the largest sieve in the applicable specifications upon which any material is permitted to be retained

Note 3: Price adjustment factor applies where criteria is contained in the material specification.

